

Replacement Page 1, 1st Paragraph

BACKGROUND OF THE INVENTION

The invention relates to a hydraulic circuit for controlling a system comprised of a clutch and a brake with separate clutch and brake in the main drive of a mechanical press, wherein clutch and brake are movable by a piston/cylinder unit between the coupling position and the braking position and wherein the piston/cylinder unit can be connected communicatingly to the pressure line by a press safety valve for torque generation at the clutch and wherein the brake is spring-loaded against the engagement direction of the clutch according to the preamble of the independent claim.

Replacement Page 2, 1st and 2nd Paragraphs

SUMMARY OF THE INVENTION

Despite of this, it is an object of the present invention to shorten the acceleration and stop times of such presses to such an extent that an increased loading of the drive is prevented.

The invention solves this object in that parallel to the press safety valve a metering piston unit is connected by a bidirectionally passable hydraulic connection to the piston/cylinder unit ~~with the features according to the independent claim.~~

Replacement Page 6, 2nd and 3rd Paragraphs

BRIEF DESCRIPTION OF THE DRAWINGS

In the following, the invention will be explained in the form of embodiments in more detail.

It is shown in:

Fig. 1 a first embodiment of the invention,

Fig. 2 the schematically illustrated press safety valve of Fig. 1 with further details;

and

Fig. 3 braking time, delay time, acceleration time in a diagram.

DESCRIPTION OF PREFERRED EMBODIMENTS

If nothing else is indicated in the following, the following description applies to all Figures.

Claims

WHAT IS CLAIMED IS:

1. - 12. (canceled)

13. (new) A hydraulic circuit for controlling a clutch/brake system comprising a clutch and a brake, wherein the clutch is disposed separately from the brake in a main drive of a mechanical press, wherein the brake is spring-loaded in a direction opposite to an engagement direction of the clutch; the hydraulic circuit comprising:

a piston/cylinder unit adapted to move the clutch and the brake into a coupling position of the clutch and a braking position of the brake, respectively;

a press safety valve;

a pressure line connecting the press safety valve to the piston/cylinder unit for generating torque at the clutch;

a metering piston unit;

a bidirectionally passable hydraulic connection connecting the metering piston unit to the piston/cylinder unit in parallel to the press safety valve.

14. (new) The hydraulic circuit according to claim 13, wherein the bidirectionally passable hydraulic connection has a nominal diameter that is greater than a nominal diameter of the pressure line.

15. (new) The hydraulic circuit according to claim 13, wherein the bidirectionally passable hydraulic connection is free of mounted inserts that reduce the flow cross-section.

16. (new) The hydraulic circuit according to claim 13, wherein a metered oil volume provided by the metering piston unit is selected such that an end position of the

clutch and the brake is reached, respectively, in which end position there is practically no torque being generated yet at the clutch or the brake.

17. (new) The hydraulic circuit according to claim 16, wherein the metering piston unit is hydraulically dampened when the clutch and the brake approach the end position, respectively.

18. (new) The hydraulic circuit according to claim 13, wherein the metering piston unit has a limited stroke without mechanical end stops.

19. (new) The hydraulic circuit according to claim 18, wherein the limited stroke is adjustable externally.

20. (new) The hydraulic circuit according to claim 19, wherein the limited stroke is adjustable by a motor.

21. (new) The hydraulic circuit according to claim 13, wherein the metering piston unit has a main control circuit and a pilot control circuit arranged parallel to one another, wherein the main control circuit has a supply line and a discharge line that have a nominal diameter that is greater than a nominal diameter of the pilot control circuit.

22. (new) The hydraulic circuit according to claim 13, wherein the metering piston unit has a control device comprising a hydro-mechanical position control circuit for controlling volume changes caused by a change in fluid-technological parameters.

23. (new) The hydraulic circuit according to claim 13, wherein the metering piston unit is connected by a leakage compensation valve to the pressure line.

24. (new) The hydraulic circuit according to claim 13, comprising pressure reducing valves for reducing suddenly increasing braking moments and coupling moments.